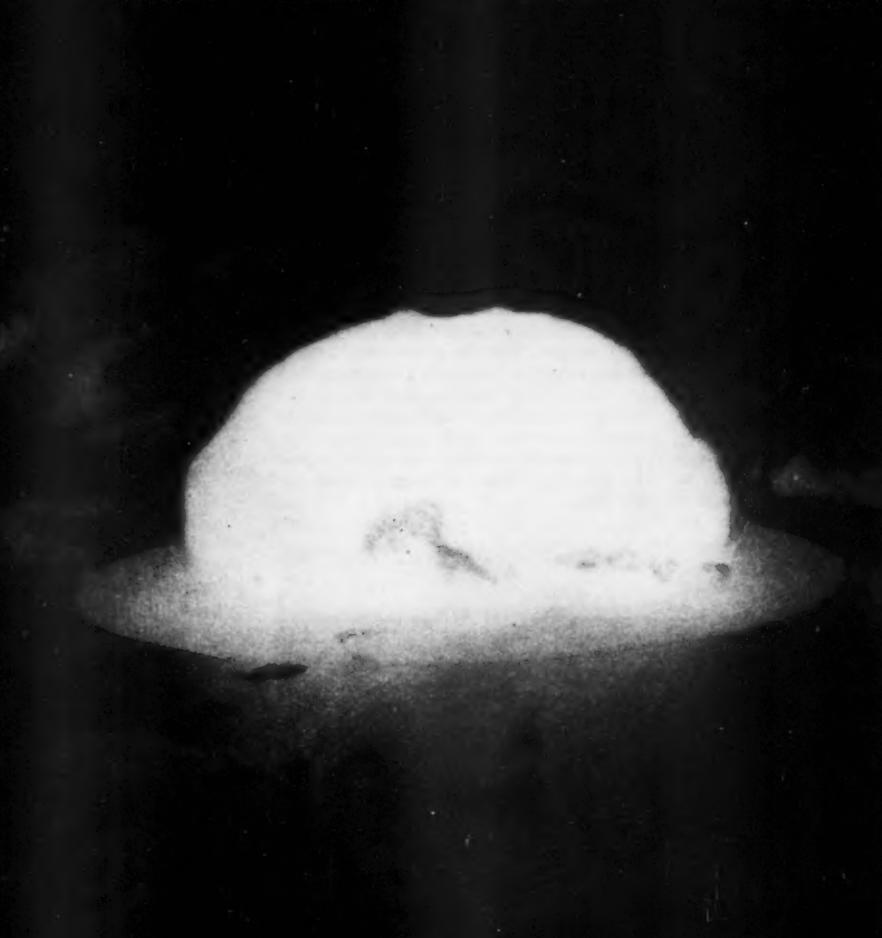


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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



A SCIENCE SERVICE PUBLICATION

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MEDICINE

Test for Liver Disease

Skin test for and vaccine protection against infectious hepatitis threatening troops in Korea are perfected. Mumps vaccine reported.

► PROTECTION against a disease threatening our troops in Korea and a skin test for it were announced at the meeting of the American Medical Association in Atlantic City, N. J. The disease is infectious hepatitis.

► A vaccine against mumps was also reported.

Infectious hepatitis is a liver disease known to the layman as jaundice because the yellow skin color is one of its symptoms. It exists all the time in Japan and the attack rate among our troops has been 35 per thousand.

The virus causing this disease has been isolated by Dr. Werner Henle and associates of the University of Pennsylvania.

At the meeting Drs. M. Michael Sigel and Klaus Hummeler of his staff reported that this virus, when inactivated by ultraviolet light, can be used as a skin test for the disease.

This same material used in the skin test seems to protect against the disease, they reported. The skin test material is not on the market yet, but the disease can be prevented also by gamma globulin from blood. This is the same kind of blood substance widely used to protect against or reduce the severity of measles. In infectious hepatitis, as in measles, the earlier the

globulin is given after exposure to the disease, the more effective it is.

Another kind of jaundice sickness, called serum hepatitis, is prevalent in Germany and was a big problem to the armed forces during World War II. This disease is caused by a different virus. The University of Pennsylvania group has also isolated this virus. A vaccine to protect against mumps was reported by Dr. Henle and his wife, Dr. Gertrude Henle. This vaccine is now on the market. It is made from killed mumps virus, which is also used to test for mumps.

The test and the vaccine are intended chiefly for grown-ups, the Henles stressed. This is because the protection from the vaccine lasts only two to three months. It is better, they advise, to let the children get mumps while they are children when the disease is less severe and is not complicated by infection of the reproductive glands. Parents of a child who gets mumps, they suggest, can be given skin tests. If it is positive, meaning they are susceptible to mumps, they can be given the vaccine which will protect them against the exposure from their child.

Drs. Henle find four out of ten persons get mumps without showing any signs of the disease.

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course in how to drive an automobile. Safety education experts who attended the President's Highway Safety Conference want to make it compulsory for all of them.

Experience has shown that, on the average, accidents are decreased by half as a result of driver training courses. With this background, the safety educators urge not only extension of driver education courses to all pupils, but also a public relations program to bring this about.

Courses now in existence range from the very elaborate down to a few hours of classroom talks. In Detroit, three schools have their own driver training lots with intersections, traffic lights, stop signals, backing areas and even a small hill. Here, students can "solo" much faster, without the danger of training on public streets.

New York University has developed films of some 30 emergency driving situations which are connected to the mock-up of an automobile. Students can be trained in the proper reactions to tire blowouts and other unexpected situations.

Some automobile manufacturers have adopted programs of aid to schools for driver education. Dealers are urged to lend automobiles to schools. Use of automobiles in the schools has increased to a total of 5,500 cars as compared with 4,500 a year ago.

Science News Letter, June 23, 1951

ANTHROPOLOGY

Search for Remains of Prehistoric First Americans

► SEARCHING FOR remains of the first Americans who may have arrived in prehistoric times on Alaska's northern shores coming from Siberia, four Harvard anthropologists will excavate this summer the permanently frozen soil of our northern waste lands.

Bones of the ancestors of the American Indians have not been found on the shortest route across the Bering Sea. The search by the Peabody Museum scientists is being extended farther north for that reason.

The habits, tools and technology of modern Eskimos will be studied to compare them with objects unearthed in the excavations.

Science News Letter, June 23, 1951

INVENTION

Patent Method for Etching Aluminum

► A METHOD of etching aluminum and aluminum alloys for decoration purposes and photomechanical printing earned for Charles Edmund Meulendyke, Rochester, N. Y., patent 2,556,626. The chemical used is a solution containing cupric chloride, glycerine and orthophosphoric acid.

Science News Letter, June 23, 1951

MEDICINE

Preparedness Lack Scored

► THE LACK of medical preparedness for handling mass casualties in case our cities are bombed was sharply criticized in a report by Capt. E. R. Hering of the Navy Medical Corps presented to the American Medical Association meeting in Atlantic City N. J.

"It seems to me, lately back from Korea, that we are sitting on dynamite," he declared.

"I have been amazed at the lackadaisical attitude exhibited by our civilian medical people regarding their responsibilities in the event of total war. One of the cruellest aspects of the action in Korea has been the plight of the wounded civilians," he stated.

"Medical care was non-existent other than the time and facilities we of the military could afford them. This must not happen here, but I see little evidence that specific concrete steps have been taken to

cope with the problem of civilian care in the event of total war."

The action in Korea, which Capt. Hering termed "a weird business," has, he said, "put the spotlight directly on our greatest weakness, the lack of medical officers who are psychologically prepared, physically toughened, professionally capable and sufficiently aware of the military aspects of any given campaign to adapt themselves and the function of their unit to the military situation of the moment."

Science News Letter, June 23, 1951

ENGINEERING

Urge All Students Be Taught How to Drive

► MORE THAN one-third of the nearly 1,750,000 eligible high school students in the country are enrolled in some type of

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MEDICINE

Grafts Repair War Wounds

New, mobile bone bank will help wounded from Korea without problem of refrigeration. Improved method of storing skin also described to AMA.

► A THREE-INCH piece of shin bone, gift to the Navy from a dead woman, will soon be grafted into the leg of one of our wounded fighting men back from Korea. The piece of bone, sealed in a glass tube, was shown to doctors at the meeting of the American Medical Association in Atlantic City, N. J.

It is important both for its future in helping to restore bone to a wounded serviceman and because it is an example of a new, mobile kind of bone bank that may help hundreds of other wounded. Bone banks are not new. But the bones in banks up to now have been frozen and had to be kept frozen until the surgeon was ready to use them. For use overseas this gave the Navy a difficult and expensive handling and shipping problem. The piece of bone shown to the doctors can be packed in a cardboard carton and shipped without refrigeration. And it will keep longer than frozen bank bone.

This advance in bone preservation was reported by four Navy doctors, Capt. F. P. Kreuz and Lieuts. G. W. Hyatt, Thomas C. Turner and Andrew L. Bassett. Working at the National Naval Medical Center in Bethesda, Md., they found that bone could be preserved by the freeze-drying methods used for preserving plasma. Bones preserved by this method are not live bone, they explained. But when grafted they act as a strut or trellis until the body can form its own new bone.

A new method of storing skin has also been developed by these four Navy doctors with the aid of Dr. W. R. Earle of the National Cancer Institute. Instead of storing it in pliofilm at icebox temperatures, it can now be stored in a liquid made of balanced amounts of salt and blood chemicals with penicillin and streptomycin to prevent germ growth.

A Marine with a 12-inch-long hole in his leg that went so deep the bone was exposed is one of the men who has already benefited from this new preserved skin. The man got his wound in Korea. He had to lie about 36 hours before he could be rescued. His leg was splinted and he was flown back to the Naval Hospital at Bethesda. He suffered excruciating pain because of the nerves that were torn when he was wounded. This made it almost impossible to dress his wound daily, as was necessary. And he had developed a sensitivity to drugs so that he could not be given morphine or other pain-killers.

In desperation the doctors at Bethesda

finally took all the skin from their new type skin bank and put it on his wound. The quick relief of pain and improvement in his general condition were dramatic, the doctors reported. The preserved skin acted as a dressing. It was left on for several weeks, during which time no other dressings were needed. When it finally sloughed off, he was in shape for having his own grafted on him. This, also, had been kept by the new preserving method.

Science News Letter, June 23, 1951

TECHNOLOGY

Nitrogen Packaging Keeps Foods Fresh a Longer Time

► PACKAGING in nitrogen instead of oxygen of the air will keep such foods as potato chips, roasted nuts, dry soup mixes and dehydrated foods, packed in flexible film, fresh for much longer than now possible.

"Same-day" freshness for foods packed months or even a year before their purchase was promised by W. S. Walker of the Linde Air Products Company. He told members of the Institute of Food Technologists meeting in New York that the benefits from using nitrogen to protect

food products against oxygen deterioration have been proved for many foods.

Nitrogen is harmless and tasteless and does not change the natural flavor and color of the food. Shelf life and quality of film-packed foods are improved significantly by processing and packaging in an atmosphere of nitrogen, eliminating atmospheric oxygen, a contributing cause of food spoilage and rancidity.

Science News Letter, June 23, 1951

PHYSICS

Rescue Work Not Stopped by Radiation from Atom Bomb

See Front Cover

► RADIATION HAZARDS will not delay rescue and recovery work after an air burst of an atomic bomb, it was announced officially in the report of Joint Task Force Three upon the atomic bomb tests conducted in April and May.

In a high aerial burst there would be no residual radiation. In a low air burst just above the ground's surface, the significant residual radiation would be confined to a radius of 300 to 400 yards which would be completely devastated and need no rescue work.

No further information about thermonuclear weapon development (so-called hydrogen bomb) beyond earlier cryptic statements (SNL, June 9, p. 357.) was made available.

A 1951 version of the now familiar atomic bomb mushroom is shown on the front cover. It is an early phase of one of the nuclear explosions.

Science News Letter, June 23, 1951



FIRE BALL—In one of the latest atomic tests at Eniwetok Atoll, the fire ball of a nuclear detonation pushes upward through the clouds.

MEDICINE

Human Thrombin Recalled

Find that thrombin, blood-clotting substance, made from human blood was spreading the virus of a type of jaundice, so recall is issued.

► ALL THROMBIN made from human blood has been recalled from hospitals, doctors' offices and drug-distributing firms by the National Institutes of Health of the U. S. Public Health Service.

Reason for the recall is that it has been found spreading the virus of a kind of jaundice called serum hepatitis.

Thrombin is a natural blood-clotting or anti-bleeding substance in blood. It has been used to check bleeding during surgical operations, particularly operations on the brain such as removal of brain tumors where it is hard otherwise to control bleeding.

In Portland, Me., 14 cases of serum hepatitis have occurred during the past 10 months. In all of these the patients had undergone brain operations in which thrombin of human origin was used. The health officer in Portland reported this to the U. S. Public Health Service as soon as the pathologist, who had been making blood tests on the patients as they got sick, discovered the common factor responsible for all the cases.

Public Health Service officials subsequently have discovered that about a dozen cases of serum hepatitis following brain surgery in which human thrombin was used have occurred in recent months in two Boston hospitals.

The Boston and Portland cases are the first in which the connection between serum hepatitis and human thrombin has been made. Other cases, however, may have occurred without anyone noting the connection. It takes months, from 60 to 120

days, for serum hepatitis to develop after the virus has gotten into the patient's body. Consequently, it takes some medical detective work to discover in each case where the patient got the virus.

Cases of serum hepatitis in the past few years have been traced to blood and plasma transfusions and to hypodermic syringes which transferred the virus from one patient to another. Sterilizing the plasma by ultraviolet rays, required by the National Institutes of Health, is considered effective in killing the serum hepatitis virus.

Thrombin of bovine origin, from beef blood, is safe and has not been recalled, U. S. Public Health Service officials state.

Science News Letter, June 23, 1951

TECHNOLOGY

Bacon Now Cured in Two Days by Injection

► BACON CAN now be cured in two days, instead of the two to four weeks normally required. Injecting the bacon with the curing pickle is the new process.

Over 100 extremely fine stainless steel needles built into a fully automatic machine give bacon this quick cure, members of the Institute of Food Technologists were told at their meeting in New York. Kingan and Company, Indianapolis, Ind., developed the process and machine.

Each needle, through four small holes, delivers a measured amount of curing pickle to the bacon as it passes by the machine on a conveyor belt. Over 5,000 pounds of bacon

per hour can be pumped with this machine, using only two operators.

Curing time of hams and shoulders has been reduced from about 45 days to less than a week by pumping the curing solution into the arterial system, but bacon is not adapted to artery pumping. Now the quick-cured bacon can be ready for smoking 48 hours after the multiple injections. No puncture marks appear on the finished bacon.

Science News Letter, June 23, 1951

SCIENCE NEWS LETTER
VOL. 39 JUNE 23, 1951 No. 25

44,500 copies of this issue printed

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N. W., Washington 6, D. C., North 2253. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

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Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C. under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R. 1948 Edition, paragraph (d) (act of February 28, 1923; 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5366 and 360 N. Michigan Ave., Chicago, ST 2-4822.

SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

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Question Box

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PUBLIC HEALTH

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TECHNOLOGY

How can bacon be cured in two days? p. 388.

MEDICINE

X-Rays Diagnose Breast Cancer Without Biopsy

► GREATER USE of X-rays to diagnose breast cancer should both save many women from needless operations and prevent cancer deaths, the American Medical Association was told at its meeting in Atlantic City, N. J.

In most cases X-ray examination will tell whether a lump in a woman's breast is cancer or some other condition, Dr. Helen Ingleby of the Jewish Hospital, Philadelphia, reported. In many cases the X-ray picture will also distinguish between various conditions that are not cancer.

Heretofore physicians have relied for breast cancer diagnosis upon examination of the breast plus biopsy, which consists of removal and microscopic examination of a tiny piece of tissue suspected of being cancer.

Dr. Ingleby based her new approach in the cancer fight upon studies she and Dr. Jacob Gershon-Cohen have made in which they compared X-ray pictures of the breast with sections of breast after surgical removal.

The cancers they found in the breasts were the same in location, size and shape as the shadows seen on the X-ray pictures taken before operation.

Now they feel they can tell a woman when the lump in her breast is a cyst, when it is due to glandular changes, and when it is due to cancer without submitting her even to the minor operation of biopsy in cases that do not require any operation. If the X-ray picture shows cancer, the Philadelphia scientists of course urge immediate removal of it.

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ENGINEERING

Boss to Blame if Workers Make Errors Day After Day

► THE BOSS is at fault if a workman continues to make the same error day after day. That is what the American Society of Mechanical Engineers meeting in Toronto, Canada, was told by W. F. McMullen of Canadian General Electric Company, Ltd., of Toronto.

Many workers make the same mistake over and over again because no one ever takes the trouble to correct them, he stated. It is management's duty to do this, he said. The boss should discuss a man's work with him at regular intervals to let him know how he is doing. To do this job intelligently, the boss should keep a continuous record of the individual's performance.

This record should show how the person is doing on his present job, what he can do to improve and what additional training can be given him to help him improve. Also it should show what his ultimate potential is and what he needs to move towards it.

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CONTROL BOARD—Closeup of the master control board of the UNIVAC. Dr. John W. Mauchly, one of the inventors, is leaning over the panel.

MATHEMATICS

Computer Figures Census

Electronic brain grinds out census data. UNIVAC is first computer designed to compile statistics as well as handle mathematics.

► THE FIRST electronic computing brain ever to be used in compiling census data is hard at work grinding out figures.

After almost five years of construction, the UNIVAC was unveiled to the public in Philadelphia. Although much smaller than the first of its family, the wartime ENIAC, the new electronic computer still fills a normal-size room.

The first electronic computer designed to compile statistics as well as handle complicated mathematical problems, the UNIVAC—Universal Automatic Computer—was constructed specifically for the U. S. Census Bureau.

Even during the dedication the electronic computer worked right along. Dealing with data compiled during the 1950 census, it figured out for Monroe County, Iowa, just how many men and women there are in the county, whether they live in the city or country, and the number of school years they completed.

The UNIVAC is $14\frac{1}{2} \times 7\frac{1}{2}$ feet, and stands eight feet high. It was built by the

Eckert-Mauchly Computer Corporation, a division of Remington Rand, Inc., under the supervision of the National Bureau of Standards. Prof. J. Presper Eckert and Dr. John W. Mauchly who designed it are the same men who several years ago at the request of the Army developed the ENIAC, a machine much too large for commercial use.

In only one-thirtieth of a second the new electronic brain can make a statistical description of a baby under one year of age who did not fall in the census sample. It takes about one-third of a second to classify the complete description of a person who was an employed foreign-born male, the head of a household, a veteran included in the census sample who had changed his place of residence during the pre-census year, was between 25 and 35 years old, attended school but did not graduate from college, and was not the sole support of the family.

In the wink of an eye—about one-sixth of a second—the machine can completely describe a typical American citizen.

The census information about a person is fed into the machine on a magnetic tape. One and one-third inches of this narrow tape records the complete census description of a person in code numbers. Each second ten thousand of these digits are read off the magnetic tape by the UNIVAC.

Operation of the UNIVAC requires the continuous functioning of 5,400 electronic tubes. The machine possesses a mercury memory in which can be stored for future use tens of thousands of electrical impulses, each group of seven representing a character. The machine automatically uses these stored characters, which may be letters or numbers, as needed.

When the UNIVAC completes its tabulation for a city or county, it again records its answers on magnetic tape. An auxiliary piece of equipment types off the statistical data, to be incorporated in the published results of the 1950 census.

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PUBLIC HEALTH

Leave Poison Ivy Alone; Home Remedies May Irritate

► LEAVE POISON ivy alone. This applies to both the three-leaved plant and its relatives that cause the poisoning and to the skin eruption itself. Home remedies may further irritate your already irritated skin, doctors point out, and in the process of applying the home remedy you may spread the poisoning to unaffected parts of the skin.

If the itching is very bothersome, better consult your doctor. He may give you something to relieve the itching, or he may prescribe only a protective bandage.

The new anti-histamine drugs help a few poison ivy sufferers—about one in 10. For ivy poisoning, it is better to take these in the form of pills rather than to use an ointment containing anti-histamine chemicals. This is because the ointments have a high sensitizing index, and with the skin already in a sensitized state, the ointment is likely to make matters worse instead of better.

If you have been in contact with poison ivy, poison oak, or poison sumac, scrub your hands and other parts of the skin carefully with soap and water. Remember that clothing, shoes, garden implements and the like may also have gotten the poison on them, so launder or otherwise thoroughly clean these also. Dogs and other animals that have been running in the underbrush may have come in contact with the plant and may be carrying some of the poison. Smoke from leaf rubbish fires, if poison ivy has been a part of the rubbish, can be a source of trouble to the sensitive.

"Shots" for protection against ivy poisoning have been disappointing and are still not recommended practice.

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PSYCHIATRY

Psychiatry Is Cheaper

More patients should get psychiatric treatment in beginning of their illness to speed their recovery and reduce over-all cost.

► PSYCHIATRIC TREATMENT should be given to more patients because in many cases it is less costly than other forms of treatment, Dr. Eugene Ziskind of Los Angeles declared at the meeting of the American Medical Association in Atlantic City, N. J.

This may come as a surprise to many who have heard of the high cost of psychiatric treatment. But Dr. Ziskind's point is that about one third of the patients seen by physicians have ailments due to or related to a mental or emotional disturbance.

Getting treatment for this primary factor of the sickness in the beginning will save money in the end by getting the patient well faster and preventing chronic invalidism with its "unending expense."

Often, he said, psychiatric treatment in the beginning does not even require a greater initial outlay of money because of a saving in the cost of X-ray and laboratory tests and even hospitalization.

Doctors at the Cedars of Lebanon Hospital Psychiatric Clinic, where Dr. Ziskind is director, are finding this approach helpful, he said, in showing not only the scientific soundness of psychiatric treatment for many ailments but "the fact that it is less costly than other forms of medicine."

"It is extremely urgent," he declared, that psychosomatic illness be checked at the earliest possible moment. The physician, seeing the patient in the earliest stages of symptom formation, is in an opportune position to treat these cases successfully. At the initial appearance of the illness the causative factors are close to the surface and are readily uncovered.

"When psychogenic factors are of recent onset the prognosis (prospect of recovery) is relatively good and a cure not difficult to obtain. The prospect of preventing chronic states, many of which are incurable, is an insistent argument for the earliest possible approach to psychogenic illness."

He emphasized that treatment in the first stage is not for the psychiatrist, but is one which the general practitioner usually can carry out. The major obstacle, he pointed out, was the physician's lack of time.

"Proper psychotherapy requires that the doctor grant the patient an initial interview of considerable length and that he receive the patient for return visits of 30 to 40 minutes duration, at times for several such sessions," he said.

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MEDICINE

Predict Common Cold Cure

► A CURE for the common cold, an increase in the world's food supply and a method for utilizing the sun's energy may be expected within the next 50 years through further researches in bacteriology, Dr. Walter J. Nungester of the University of Michigan predicted in his presidential address to the Society of American Bacteriologists meeting in Chicago.

Dr. Nungester admitted that he was doing some "crystal ball gazing." But he pointed to advances in bacteriology over the past 50 years, including some of the fundamental research work reported at the present meeting as basis for his prediction.

He previously published a discovery by himself and his associates which may help explain why pneumonia so often follows attacks of the common cold.

Excessive mucus in the body's breathing tract can lower the ability of body tissue to resist infection, he and Drs. J. K. Bosch and Darwin Alonso find. (PROCEEDINGS OF THE SOCIETY OF EXPERIMENTAL BIOLOGY AND MEDICINE, April).

In healthy persons normal production of mucus plays an active part in protecting the body against disease. But when rats were given shots of pneumonia germs mixed with human mucus, their resistance was lowered by as much as 10,000 times. The same proved true when streptococcus germs were given in a preparation with human mucus.

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INVENTION

Outside Thermometer, Easily Seen, Is Patented

► IT WILL be easy to see the thermometer outside the window with an illuminated type on which patent 2,556,394 was issued to Kenneth W. Jackson, Sherrill, N. Y. This thermometer, a mercury tube type, has a translucent thermometer scale plate, and illumination from a flashlight bulb which is operated by a switch inside the window.

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MEDICINE

Chemicals Aid Surgical TB

SK and SD, aiding wounded in Korea, are helping to treat home tuberculous patients. The two chemicals liquefy blood clots in chest.

► SK AND SD, two chemicals which can help our wounded in Korea, are giving civilian doctors, a more satisfactory way of treating some tuberculosis patients at home.

SK is short for streptokinase. SD is short for streptodornase. Both are obtained from the growth of certain varieties of hemolytic streptococcus germs, best known to the layman as the cause of strep sore throats and other ailments.

Good results in use of these chemicals to treat tuberculosis patients were reported by Drs. Joseph M. Miller, Perrin H. Long and Edward S. Stafford of the Johns Hopkins Medical School and Hospital, Baltimore, at the meeting of the American Medical Association in Atlantic City, N. J.

Dr. Miller is chief of the surgical service at the Veterans Administration Hospital, Fort Howard, Md.

In the Korean action these chemicals may be used for men with chest wounds. SK and SD liquefy blood clots in the chest following such wounds so that the blood can be sucked out. This lets the lungs re-expand. During World War II many wounded men required operations for this condition. But in the Korean action,

the Baltimore doctors stated, fewer operations should be necessary through the use of SK and SD.

The 19 tuberculosis patients for whom the chemicals were used by the Baltimore doctors did not have tuberculosis of the lungs, they emphasized. These 19 had so-called surgical tuberculosis. Four had tuberculosis empyema, five had tuberculous glands in the neck, and the others had tuberculosis of the spine, bones and joints. In 14 cases the disease was severe.

SK and SD were used in these patients as aids to surgical drainage treatment. In 16 the infection has been controlled and all wounds and sinuses have healed. The other three had far advanced, progressive tuberculosis. The local conditions improved, but the general disease progressed and the patients died.

The swift healing of tuberculous abscesses that comes from surgical drainage combined with use of SK and SD gives a "more satisfactory way" of treating these conditions than older, conservative methods, the doctors stated. SK and SD are aids to, but do not substitute for, the usual surgical measures for caring for infected

wounds. They have only two actions: 1. Liquefying the fibrin of the blood clot. 2. Dissolving desoxyribose nucleoprotein. Removal of these two substances from wound surfaces, however, enhances healing and permits white blood cells and antibiotic drugs such as penicillin to get directly at the germs in the wounds.

The action of SK and SD was reported by Dr. William S. Tillett in 1934. They are now available in pure form in quantity and can be stored for long periods in the dry form at freezing temperatures. Harmful or toxic effects from putting them on external wounds have so far not been reported. They are used in solution or ointment form. Lederle Laboratories now markets them under the trade name, Vari-dase.

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AERONAUTICS

More Power in New Jet Than Most Fighter Planes

► THE SOVIETS may have the best jet engine actually in use in fighter planes, as recently stated by a U. S. Air Force officer, but several improved American turbojets have passed the experimental stage of development and will be ready for installations soon. Among them is a new turbo-jet revealed by General Electric Company of Schenectady, N. Y.

This engine is far more powerful than the company's present battle-tested J-47 which is used in several American planes including the record-holding North American F-86 Sabre fighter and the world's fastest bomber, the six-jet Boeing B-47 Stratojet. Details of its power are not revealed but it is far in excess of the 5,200-pound thrust of the present J-47. It can be used as a replacement for G.E. present turbo-jets because it has the same frame size.

The new jet engine is designated the J-47-GE-21 and is the first of the company's "Advanced J-47" series to be announced. It has a low rate of fuel consumption and is an all-weather engine with anti-icing features and high-altitude starting characteristics. It is equipped for either water or alcohol injection or after-burning to give added thrust for short periods.

Science News Letter, June 23, 1951

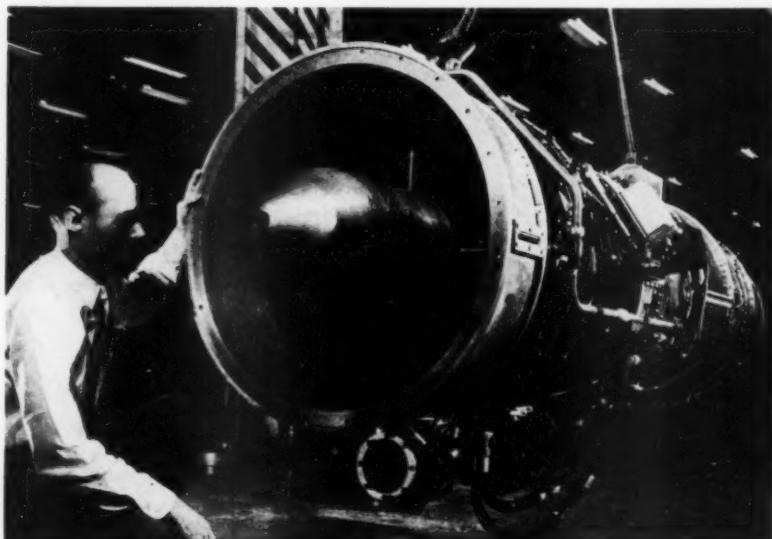
METEOROLOGY

Coast Resorts Can Expect Near Normal Temperatures

► SEASHORE VISITORS, no matter in what part of the country, can expect the normal weather along the coasts until the middle of July. But back a distance from the coast it will be hotter than expected.

This is the way the Extended Forecast Section of the U. S. Weather Bureau puts it: "Above normal in the interior of states bordering the Pacific, Atlantic and Gulf of Mexico."

Science News Letter, June 23, 1951



MILITARY JET—Latest turbojet engine, made by General Electric Company and designated the J-47-GE-21, is here being inspected by R. O. Miller. It is the same size as the company's present battle-tested jets, but more powerful with a thrust rating far in excess of 5,200 pounds.

MEDICINE

Cretin Dogs Promise Help In Artery Hardening Search

► A SUCCESSFUL means of producing cretinism in dogs gives medical science a new approach to the cause and treatment of hardening of the arteries, one of mankind's unconquered diseases.

Reported to the American Medical Association meeting in Atlantic City, N. J., cretinism was produced by University of Chicago surgeons by injecting radioactive iodine either into the mother dog two weeks before the pups are born or into the pups two or three days after birth. This destroys the thyroid glands, producing cretinism similar to that which occurs in human beings.

Nine months after birth the cretinous dogs become extremely fat and lethargic. Fatty substances and cholesterol, involved in artery hardening, appear in the blood. Such dogs will be living laboratories for study of arteriosclerosis and use of fat by the body.

The investigators are also using the cretinous dogs for the study of the way the various glands work together in the body. They have found that the sex glands remain immature when the thyroid is destroyed, and the pituitary gland enlarges. So far, the lack of thyroid does not seem to affect either the adrenal glands or the pancreas.

Dr. Lester R. Dragstedt, chairman of the department of surgery, Dr. Edward R. Woodward, instructor, Dr. Harry A. Oberhelman, research assistant, and Dr. Curtis A. Smith, assistant resident, developed the new method.

Science News Letter, June 23, 1951

AERONAUTICS

Jet Transports Schedule: 10 Hours, Canada to Tokyo

► TEN HOURS in the air from Vancouver, B. C., to Tokyo, Japan, is scheduled as flight time for two jet-propelled 50-passenger airliners which will begin regular service on this route within a year. The return trip will require only eight hours because the airships will be aided by the prevailing westerly winds.

These airliners are in the 500-mile-per-hour class and will make the trip in half the time required by the transports now on the route. They are British De Havilland Comets, powered by four De Havilland "Ghost" turbo-jet engines. They will be operated by Canadian Pacific Airlines, Ltd., and will make stops at Anchorage, Alaska, and on one of the most westerly of the Aleutian islands.

Details of this "jet" route were presented to the American Society of Mechanical Engineers meeting in Toronto, Canada, by Wallace G. Townley, Canadian Pacific's general manager of operations. An overall saving of 10% to 20% is anticipated by the

company, he said, largely because of low maintenance cost and also because two of these jet-airliners will do the work of four of the present type transports.

Such components as propellers, cabin superchargers, cabin and thermal de-icing heaters are lacking in the turbo-jet aircraft, he stated. It is not necessary for the Comet to incorporate many of the space-consuming and weighty passenger service facilities which are required in current transports.

"This is due primarily to the speed of the Comet which, in round terms, is double that of current transports. This aircraft therefore reaches its destination in half the time and the necessity for providing meals, refreshments and other services is consequently reduced."

Science News Letter, June 23, 1951

PUBLIC HEALTH

Learn to Swim for Safety on Vacations

► VACATIONS CAN be more fun, and safer, if you know how to swim. The swimmer can have not only the fun of swimming but can more safely enjoy canoeing and sailing. If you can not swim, try this summer to learn this pleasant, healthful activity.

Do not rely on water wings, old inner tubes or other air-filled toys to hold you up if you can not swim. A sudden leak may leave you struggling without support in deep water. Other rules for safe swimming, as important for practiced swimmers as for beginners, follow:

Swim only at beaches where lifeguards are on duty.

Do not swim out too far beyond your depth.

Always make sure you are accompanied by a boat when swimming long distances.

Never play practical jokes on persons in the water, especially on those who can not swim.

Before diving, always check on the depth of the water and make sure there are no obstructions hidden below the surface. This is especially important at low tide.

Don't go in the water immediately after eating. If subject to cramps, wait for at least two hours and then do not go in water beyond your depth.

If you have a heart impediment, be very careful to avoid sudden shocks while bathing.

Never swim in polluted waters which have been condemned by the Health Department.

Watch the babies and small children. Many toddlers will daringly follow grown-ups or big boys and girls into the water. If they lose their footing or are covered by a wave, they may be drowned before they are missed, unless some one has the job of keeping constant watch over them.

Science News Letter, June 23, 1951

IN SCIENCE

INVENTION

Throw-Away Dust Collector Features New Air-Cleaner

► THROW-AWAY dust-collecting electrodes in a home or office air-cleaning device of the type known as an electrostatic precipitator, on which a patent was issued by the government, eliminate the usual need of flushing the cleaner out with water to remove collected particles. The electrodes are inexpensive.

Electrostatic precipitators remove dust and pollen passing through them by subjecting the particles in the air to static electricity charges so that they are attracted and held by electrically charged plates or electrodes. The usual type is connected to the water system so that collected dust may be washed out at intervals. In this type, when the collector cell becomes loaded the electrical power is shut off, the outlet end portion of the precipitator is removed, then the collector cell taken out and replaced by a clean one.

Inventors are William J. Roos, Sharon, and Ray W. Warburton, Medfield, Mass. Patent 2,556,982 was awarded to them. Westinghouse Electric Corporation, East Pittsburgh, Pa., has been assigned the patent rights.

Science News Letter, June 23, 1951

MEDICINE

Publicity on Cancer Shown To Be Paying Off

► FIRST HINT that the intensive publicity, diagnosis and research progress against cancer is paying off shows up in life insurance figures.

Cancer in all forms, leukemia and Hodgkin's disease actually showed reduced deaths for 1949-50 compared with 1946-47 for white women aged 25 to 74 years. For white males there was improvement at ages 1 to 14.

For cancers at accessible sites for white males and females the trend was generally downward, and this was generally the case for the hidden locations as well but not to such an extent.

There were sizable death rate increases in some kinds, however, such as cancers of the lungs, pleura, bronchial area and pharynx.

The statistics compiled by Metropolitan Life experts are considered encouraging for the future because previously there had been a general rise in cancer mortality.

Science News Letter, June 23, 1951

SCIENCE FIELDS

HORTICULTURE

Once-a-Week Soaking Better for Home Garden

► HERE'S ADVICE for home gardeners: A good irrigation once a week will do more for your half-grown vegetables than a light sprinkling every day.

Experts at the University of California Agricultural Extension Service, Davis, Calif., say it is the amount of water the plants get, and not the number of irrigations that count.

During the summertime much of the water applied to the surface four or five inches of soil is lost through evaporation. The water that penetrates deeper into the soil will stay there for the plant to use.

Although soil moisture and condition of the plants are the best indications of need for water, there are three main irrigation periods to consider in a home garden.

1. While the seeds are germinating, light sprinklings will keep the top few inches of soil moist, which is all that is necessary.

2. While the root system is becoming established, light sprinkling may again be necessary. However, gardens started in the spring when the soil is filled with moisture from winter rains may grow fairly well for several weeks without further water.

3. When the plants are fairly well advanced, the water in the root zone begins to dwindle. It must be replaced by irrigations that will penetrate to a depth of at least two feet. On a sandy soil, sprinklers should run from two to three hours in one spot to reach down two feet. On heavy soils it may take four to five hours to wet to that depth.

Science News Letter, June 23, 1951

TECHNOLOGY

Electronic Machine Sorts Lemons by Ripeness Color

► AN ELECTRONIC machine that sorts lemons according to color has successfully completed a trial under packing house conditions.

Since lemons color-ripen unevenly they must be carefully sorted for marketing. A tree at harvest carries fully ripe, silver, light green, and dark green fruits. The fully tree-ripened fruit goes to market immediately; the others are stored to color-ripen later.

The machine operates by measuring the amount of light reflected by the lemon.

With the cooperation of the Western Regional Research Laboratory at Albany, engineers of the University of California found that in a particular portion of the

infra-red region of the color spectrum, yellow lemons had 90% reflectivity but the dark green only 10%.

A metering device feeds the lemons properly oriented in single file into a sorting chamber. When the illuminated lemon passes through a bank of light-sensitive cells, its reflectivity response is used to set up electrical operations in the signal and power circuits. These control the gates for routing the fruit into its correct color class.

If the lemon is fully ripe, it passes through the mechanism without operating a gate. If it is silver or light green or dark green, the amplified energy from its reflectivity response signals the correct gate combinations to direct it into the proper color class. Before the next fruit is processed, the gate must close. All this takes from one-fourth to one-fifth of a second. Thus, a single unit machine color sorts four to five lemons a second.

Since it is responsive to the chlorophyll in the fruit, the color sorter so far used only on lemons may be adaptable for use with other fruits.

Science News Letter, June 23, 1951

MEDICINE

Gout Attacks Yield to Benemid, New Chemical

► ATTACKS OF gout may be cut down in number and severity or prevented altogether through long-term use of a chemical called benemid, Drs. Bernard M. Norcross, L. Maxwell Lockie, John H. Talbott and Charles Bishop of Buffalo, N. Y., reported at the meeting of the American Rheumatism Association in Atlantic City, N. J.

They gave the chemical to more than 25 gouty patients. Some got it in combination with such standard gout medicines as colchicine and salicylates.

Complications of the disease, as well as attacks, may be prevented or reduced to a minimum, the Buffalo scientists believe.

Benemid's chemical name is p-(dimethylsulfamyl) benzoic acid. It is also being used to step up the effects of PAS in treatment of tuberculosis.

Science News Letter, June 23, 1951

INVENTION

Automatic Lock for Home Windows Patented

► AN AUTOMATIC lock for the home window brought Patrick F. Foley, New York City, patent 2,556,720. It is a simple device, including a bracket to attach to the window sash on which are lugs, and a pivoted eccentric with teeth which provide a curved serrated gripping surface to engage the lugs. A rod from the eccentric passes to another bracket of the other sash and has a coiled spring on it which forces the wedging action of the eccentric.

Science News Letter, June 23, 1951

INVENTION:

Now Standing Auto Can Have Air-Conditioning

► COOLING SYSTEM for automobiles, for the comfort of drivers and passengers, utilizes a box containing ice on the floor in the front of the car through which air is forced by the driving speed or, when needed, by an electric blower. The blower used is the one employed to operate the ordinary defroster. The feature of this cooler is that it delivers refreshing air even when the car is standing. Inventor is George R. Lepper, Chicago. Patent 2,557,004 was awarded to him.

Science News Letter, June 23, 1951

ELECTRONICS

New Transparent Screen Gives Clearer Television

► BETTER TELEVISION pictures are promised with a new transparent screen for picture tubes revealed by General Electric Company of Schenectady, N. Y. The screen is still in the development stage but tests to date indicate that it gives clearer pictures than present screens, with greater contrast between light and dark areas.

Present tubes are coated inside with a powder which appears white or gray, which is the darkest that any areas on the screen can be, the scientists who developed the new screen explain. When looking at one with a transparent screen, the viewer sees through it into the dark recesses of the tube. It is this greater degree of darkness that is available for producing dark areas on the screen to contrast with the light areas.

Ordinarily the powder coating inside the screen is necessary to achieve a picture. It is caused to glow wherever it is struck by a beam of electrons. Dr. Ferd E. Williams, GE scientist, discovered that a transparent screen capable of glowing under the impact of electrons could be made from zinc fluoride mixed with manganese. These chemicals were heated in a vacuum so they evaporated and condensed on the glass to be used as a screen in a thin transparent film about one eight-thousandth of an inch thick.

Further treatment is needed to make the film withstand continued bombardment of electrons. This includes heating to about 930 degrees Fahrenheit and passing a stream of hydrogen sulfide over it for a ten-minute period. In an improved process, full treatment is given in one operation. The zinc and manganese are deposited on a heated glass surface in the presence of hydrogen sulfide.

In addition to Dr. Williams, other scientists who helped develop the transparent screen are Dr. Frank J. Studer, D. A. Cusano, A. H. Young and Dr. L. R. Koller.

Science News Letter, June 23, 1951

ENGINEERING

Electric Light Without Bulbs

Walls and ceilings of rooms can glow with newly developed electroluminescence which is an advance beyond familiar fluorescent tubes.

By WATSON DAVIS

► A NEW kind of electric lighting has just come out of the laboratory. It will be available in flat panels of glass instead of in the usual bulbs or tubes.

You will see its first commercial application in the glowing faces of new self-lighting electric clocks. Later, luminous panels will convert the walls and ceilings of rooms into sources of diffuse, soft light. Even earlier there will be obvious but secret military applications.

The new method of producing light is called electroluminescence. It is as different from the familiar fluorescent tube as the incandescent lamp was from the fish-tail gas burner or from the candle-flame.

It is a relatively "cold light," producing less heat than conventional electric lighting.

It took several years of working on an almost "impossible" problem given to Sylvania Electric Products chemist to get a method that promises another electric lighting revolution. The chemist was Dr. Elmer C. Payne, who up to a decade ago was working on the problems of insecticides and other chemicals rather far removed from luminescent materials.

A French scientist, Dr. G. Destriau, had earlier reported that some luminescence appeared to be obtained when a chemical powder consisting chiefly of zinc oxide was mixed with castor oil, spread on mica and a current conducted to it through a layer of salt sea water. The luminescence at low voltages was apparently so weak that some scientists regarded the existence of the phenomenon as not having been fully established. But the company with which Dr. Payne is associated took one of the frequent "long shots" of research, which in this case hit the target.

The result was a new lamp in which a special phosphor or light-emitting powder is mixed with a plastic that does not conduct electricity and spread over the surface of a new kind of glass that does conduct electricity. A thin metal layer, like foil, is then applied over the phosphor and plastic, and the terminals of the house lighting circuit applied to the foil and to the conducting glass. Actually this is what is known electrically as a condenser, and so the device could be called a luminous condenser, in the same way that an incandescent lamp could be called a luminous resistor.

The current fed into the lamp must be varying or alternating, because light is produced only while the current is changing.

If direct current is connected to the lamp, there is only a brief flash of light when the voltage is applied and another when the device is discharged, no light at all being emitted while the d.c. merely remains connected to the lamp.

Ordinary house current of 60 cycles per second a.c. will work satisfactorily, especially on the luminescent panels used as clock faces. But since the light is produced only while the voltage is changing, the larger number of alternations produced per second by high frequency power sources excite the lamp to even higher brightness. High voltages also increase the light output, and can easily be provided by a small transformer.

In the houses, offices and displays of tomorrow lighted by electroluminescence there will probably be simple transformers to take the standard 60 cycles current and step it up in frequency, but this will be no more complicated than much of the other new electrical equipment going into modern homes, offices and factories.

Success came to Dr. Payne's research efforts through his development of several substances that have the ability to convert electrical power into light by means of this

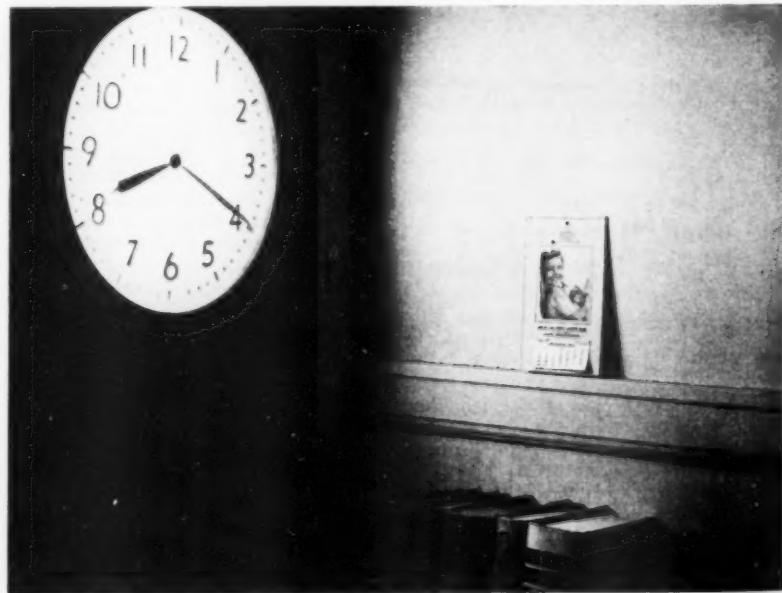
new method. Such substances are called phosphors, but they require different properties than those of the phosphors used in fluorescent lamps or television picture tubes. Some of the necessary substances are fluorescent under ultraviolet radiation (as in fluorescent lamps) or under cathode rays (as in TV tubes) and others are not. A new set of conditions has to be met.

Laboratories other than Sylvania are known to be working on this new phenomenon but the first commercial application seems likely to come from the Sylvania development.

Face-Lighted Bedside Alarm

A bedside alarm clock that lights its own face by electroluminescence is the first application planned. This will add self-illumination to pacing the time electrically. The same alternating current so essential to the new kind of lighting is responsible for the ability of the electric clock to keep time, the well-known accuracy of the electric clock being due to the precise regulation of the cyclage of the electric current by the central station. While the accuracy of the 60 cycle frequency is not necessary to the new lighting, the alternating current is essential.

For those who like a little light in the room at night while they sleep, the new self-lighting clock will be night light and timepiece combined. Thus the clock takes



CLOCK-LIGHTED PHOTOGRAPH—This photograph taken by the light of the new self-lighting electroluminescent clock is a forecast of novel lighting to come.

on one more task, additional to its main function of marking the minutes and the hours. No clock will be complete unless it is self-lighting, in addition to ringing bells and turning on the radio and the coffee maker at an appointed time.

Those who have been steering the new development, particularly O. H. Biggs, chief engineer, and Dr. E. F. Lowry, engineering laboratory manager at Sylvania, believe that the new lighting will be ideal for decorative lighting and for many jobs that can not be done well by other types of lighting. Eric Mager has been instrumental in working out some of these developments.

Museums would like to bathe their displayed treasures in light from a broad soft source. They have been especially eager to test the new method.

The dinner table or the boudoir dressing alcove could be built with principal surfaces that give light. Great halls and theaters will be designed so that their enclosures will give off light much as the sky is luminous.

Luminous Ceilings Foreseen

Luminous ceilings might be sufficient in many cases, as the brightness can be considerable. Such a ceiling would be mounted like acoustic tile.

While the most obvious form of the new lighting is a flat plate, essentially a condenser or capacitor, it can be used to make other forms of lamps. The engineers have made a wire-wound tubular lamp of this sort. A pair of enameled copper wires were

wound side by side in close physical contact in a glass tube. Then the phosphor suspended in an insulating substance was brushed over the wire wound tube. When the current was applied to the wires, luminescence was produced and the tube glowed with light.

This kind of lighting is so new that it has not been christened with a simple name. Electroluminescence might be shortened to "electrolume."

Electroluminescence is a third practical method of converting energy into light for illumination purposes.

A candle flame, an old-fashioned gas burner, or the flickering flame of the open fire gives off light because bits of carbon are heated to incandescence. These are essentially point sources of light. So, too, the incandescent electric lamp depends upon the electricity heating the filament until it gives off light. It is the same general method of turning heat energy into light radiation.

The second electrical method of producing light is by the use of gaseous discharges, with or without the addition of fluorescent materials. These give light sources that can be used as lines of light.

The new electroluminescence lighting operates in still another way, a third way, with a voltage change exciting light from the particular kind of phosphors that are used. It is area lighting in a very practical sense.

Still very new, electroluminescence seems to have a glowing future.

Science News Letter, June 23, 1951

MEDICINE

Milk Gel for Burns

Special gauze dressing with gel produced from milk has been used successfully for burn treatment. Acetic acid gel also developed.

► IF YOU are badly burned and have to go to a hospital, you may get a gel produced from milk put on your burns with a special gauze dressing over them. Or you may get a gel containing acetic acid, the vinegar acid, put on them. Or the burned surfaces may merely be cleaned and left exposed to the air without any covering. But you probably will not get any ACTH, in spite of a dramatic report of one burn victim whose recovery was attributed to treatment by this famous arthritis remedy.

Reports on all these methods were given at the meeting of the American Medical Association in Atlantic City, N. J. The milk gel treatment, announced by Drs. Raymond M. Curtis, John H. Brewer and Ira W. Rose of Baltimore, has been given by them to 434 patients so far. Dr. Walter E. Fleischer, also of Baltimore, reported using it for 303 burn victims in steel mills.

Greater relief of pain is one of the advantages stressed by both groups. Another

is the simplicity of the method. A third advantage is that it reduces to a minimum the loss of important proteins from the tissues. It eliminates the need for bulk pressure dressings. This is particularly useful in burns of the face and hands. Finally, it speeds recovery so that needed skin grafts can be put on as early as the ninth day in some cases.

The milk gel is made from the casein of milk combined with sodium lactate, also from milk and sodium lauryl acetate. This molasses-thick gel is spread over the burns to a depth of about one-sixteenth of an inch. Strips of gauze impregnated with zinc acetate are bandaged over this. The gel rises into the gauze and combines with the zinc acetate to form a semipermeable film. This film prevents leakage of blood serum protein from the burn but lets water evaporate slowly from the wound.

The gel and bandages are so easy to put

● R A D I O

Saturday, June 30, 1951, 3:15-3:30 p.m. EDT

"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Kirtley F. Mather, professor of geology at Harvard University, and Dr. Howard A. Meyhoff, administrative secretary, American Association for the Advancement of Science, will discuss "Mineral Resources and International Understanding."

on that lay persons can be trained to apply them. This great advantage in cases of mass disaster was stressed by all the doctors who have tried it.

The warning against use of ACTH in burn cases was given by Dr. Herbert Conway of New York. Three deaths in New York of burn patients from side effects of ACTH were reported. Two patients died of perforated stomach ulcers after 30 days of ACTH for their burns. One patient died from failure of the adrenal gland when ACTH had to be stopped because of acute abdominal pain.

Science News Letter, June 23, 1951

GO PLACES Learn Another LANGUAGE

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TRAVEL



BUSINESS



EDUCATION



ARMED SERVICES



CULTURAL



TRAVEL



BUSINESS



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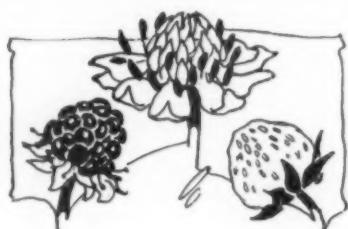
TRAVEL

BUSINESS

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Kinsfruit

► THERE IS a lot of easily-done botany in a mixed basket of fruit or berries. One can get considerable amusement determining the relationship, or lack of it, by picking them to bits—not neglecting to eat the specimens after the scientific exercise has been finished, of course.

The kinship between apples, pears and quinces is quite obvious, or that between oranges, lemons, limes and grapefruit. But it may take a little more ingenuity to show

that cherries, blackberries, raspberries, strawberries and the dry "seeds" that follow such flowers as agrimony are all cousins.

Let us start with the cherry and the raspberry. Pick the raspberry into the small pieces naturally marked off in its flesh. Cut or bite into one of these pulpy fragments, and you find a single hard little seed. The raspberry is a tight-packed cluster of tiny "cherries."

Between raspberry and blackberry the likeness is more obvious. A blackberry is solid in the center where the raspberry is hollow, that is all. The solid edible center of the blackberry is the same thing, essentially, as the tough little stem-end that remained on the bush when the raspberry was plucked. The blackberry therefore is a coating of tiny "cherries" over a pulpy and soft stem-end.

Now imagine the same pulpy stem-end greatly increased in size, while the "cherries" on its outside have shrunk and shriveled until nothing but their pits remain, with a papery skin drawn tight over them. That is the strawberry. The strawberry is all edible stem-end, as the raspberry is all outside fruit.

Finally, consider the possibility of the "cherries" being like those of the strawberry and the stem-end being like that of the raspberry. Here would be a fruit all dry and hard, not edible at all. Such is the fruit of the agrimony flower.

Science News Letter, June 23, 1951

MILITARY SCIENCE

Better Use of Men

► THE ARMED Forces have had under consideration for more than two years a system which would enable them to replace top-notch physical specimens now holding down "chair corps" jobs with men with minor physical and mental handicaps. This is called the "profile" method of classification.

It might well solve the problem highlighted in a report of the Senate Armed Services Preparedness Subcommittee. The report stated that the equivalent of three to five divisions of combat-qualified men are performing "chair corps" or training duties at 16 basic training and indoctrination centers. The Subcommittee urged the Armed Forces to make greater use of men with minor physical and mental limitations. The profile system would permit the Armed Forces to do just that, in an orderly and efficient manner.

The system consists of: 1. finding out the upper limit of physical and mental qualifications which are necessary for performance of all of the thousands of different jobs in the Armed Forces; 2. classifying potential draftees as to the kinds of jobs their physical and mental limitations permit them to do.

Thus a man of limited intelligence who

could not be trusted with a rifle might well be given a broom. A man with one leg who could not perform combat duty might be qualified to operate a typewriter or to instruct other men.

This system has been urged on the Armed Forces over the past two and a half years by the committee on physical standards of the National Research Council, with no results, so far. However, the Army has had experts go over all their job classifications, fitting them with the maximum physical and mental standards necessary to fill them.

Samplings of draftees have been classified by the profile system, but the great bulk of them have not. Thus no one knows now what jobs the great bulk of the current 4-F's could handle if they were needed.

Some Armed Forces officials are reluctant, at this time, to institute the profile system. They say that, whether men are holding down chair jobs now or not, in a time of limited mobilization, they must be qualified to move on to other jobs in the Armed Forces which require top physical qualifications. However, these officials fully expect to use the profile system if full mobilization is ever required.

Science News Letter, June 23, 1951

GENETICS

Unique Black Calf Born To White Park Cattle

► A COMPLETELY black calf has been born in the herd of English Park cattle at the National Zoological Park in Washington, D. C. Dr. William M. Mann, director, believes that it is the first such birth on record as such cattle are usually predominantly white with black noses. The parents of strange "blacky" calf are normal animals among the herd of half-a-dozen such cattle on show at the Zoo. The unusual color is believed to be a case of melanism, an abnormal amount of black pigmentation.

Science News Letter, June 23, 1951

NUTRITION

Keep Eggs in Refrigerator Particularly During Summer

► NOW THAT summer is here, remember to put the eggs in the refrigerator as soon as you get them home from the store. This advice comes from U. S. Department of Agriculture specialists who point out that only by cool and careful handling, from nest to breakfast table, can egg quality be conserved, especially in hot weather.

"Be wary," they advise, "of buying eggs from counter displays or cartons stacked in grocery aisles instead of from clean cold refrigerators. Every hour that eggs are left at high temperatures such as 80 to 90 degrees Fahrenheit, not unusual in many stores and kitchens in summer, they drop rapidly in quality. Eggs left for a few days at temperatures between 70 and 80 degrees Fahrenheit may lose as much freshness as eggs kept several weeks covered in the refrigerator. The best temperature for holding eggs is above freezing but not higher than 45 degrees Fahrenheit."

Many housewives complain about "hot weather eggs" with their thin white and flat, weak yolks, and some even stop buying and serving eggs in summer. The poor quality of so many summer eggs is not necessary, however, and it is not the fault of the hen. Eggs have plenty of fine quality when laid, it is pointed out. How much remains when the eggs are served at the table depends on how eggs are cared for by the farmer who produces them, the wholesaler, the retailer, and finally the homemaker, hotel chef, or institution manager who uses them.

Farmers need to gather eggs from nests at least three times a day in hot weather and then cool them promptly in well-ventilated containers. Next, wholesalers and retailers need to give them cool care, away from odors that may penetrate the porous shells and affect egg flavor. Grocers, delivery men, and house-to-house vendors need to keep eggs cool at all times.

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MEDICINE

Cure Scalp Ringworm

► RINGWORM of the scalp is on the march again. Whether we shall have another widespread epidemic of this childhood affliction is not known yet. But doctors at the meeting of the American Medical Association in Atlantic City, N. J., reported fresh outbursts of cases within the past two to four months in Chicago, Baltimore and Philadelphia.

This time, however, there may be a new medicine that will cure the condition in as short a time as eight weeks in many cases. Best of all, children will not have to become bald temporarily as has been the case with the chief effective treatment to date, X-rays to the scalp.

The new ringworm medicine was reported by Drs. Eugene S. Bereston and Maurice Sullivan of the Johns Hopkins Hospital, Baltimore. It is known so far only by its chemical name, 5-chlorosalicylanilide. It was developed originally as an anti-mildew chemical. It is not yet on the market, and may never be marketed because one or more related chemicals now

under trial may prove even better.

The five-chloro chemical, as the doctors call it, has given best results so far in a group of 13 possible anti-ringworm chemicals studied over a four-year period by the Johns Hopkins group. It cured 50% of the patients in eight weeks and cured 80% in 14 weeks. Next best of the 13 chemicals tested was propylene glycol dipelargonate. This cured 42%. Asterol dihydrochloride, which already has been reported as a ringworm remedy, cured only 40% of the cases in the Hopkins study.

The five-chloro compound comes in the form of an ointment, or salve, on a carbon-wax base. The child's hair is clipped or cut short and the ointment rubbed over the scalp twice a day by the parents. The scalp is washed once a week. The hair is not pulled out. With some other treatment plans, doctors have advised pulling out hair with tweezers. The five-chloro compound is made by Wallace and Tiernan.

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MEDICINE

Relive Past for Alcoholics

► REMEMBERING his past life with all of its horrible details and reliving it verbally will help an alcoholic to get over his craving for drink better than trying to forget the past, as his friends may urge.

And psychological treatment, of which recalling the past is a part, will be more effective than any of the long list of drugs including the latest addition, Antabuse.

This, in brief, is the situation with regard to curing alcoholism as reported by Dr. Edward A. Strecker, Philadelphia psychiatrist, to the American Medical Association in Atlantic City, N. J.

Hoping to get over the craving for drink by changing jobs is a vain hope, Dr. Strecker said.

"There are no occupational drydocks," he quipped.

The alcoholic patient, Dr. Strecker said, must understand that the desire to stop drinking must be for his own sake, "a matter of survival, physical and mental."

Remorse over disgrace to his family, however deep, serves no useful curative purpose. Patients who come for treatment under threats of divorce, disinheritance and the like are not good candidates.

The alcoholic under psychological treatment, Dr. Strecker declared, "often comes to understand that his alcoholism is an adult escape mechanism motivated by the emotional immaturity produced in childhood by parental loving dominance, which left him ill equipped to deal with the problems of grown-up interpersonal relationships."

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MEDICINE

Frostbite Damages Kidney

► SEVERE FROSTBITE can cause kidney damage. Studies showing this for the first time were reported to the American Medical Association meeting in Atlantic City, N. J., by Col. Robert B. Lewis, USAF (MC).

Col. Lewis' studies, at the Air Force School of Aviation Medicine, Randolph Air Force Base, Tex., were made on rabbits. He does not know whether any of the hundreds of troops who suffered frostbite in Korea

last winter also suffered kidney damage. Since making his discovery accidentally on the rabbits, he has sent inquiries to military hospitals that handled the frostbite cases from Korea, but has not yet had replies.

The kidney damage is called nephrosis and is damage to the tubules of the kidneys. It is the same as that which comes in cases of severe burns and crush injuries which were frequent among bombed civilians and troops during World War II. Apparently

it is related to the muscle damage in these conditions and in frostbite.

Skin can take freezing better than muscle, Col. Lewis reported. Muscle once frozen never comes back. He showed pictures of rabbit legs that had been subjected to below freezing temperature of 10 degrees Fahrenheit for 30 minutes. With proper treatment the skin recovered from this injury and the legs looked perfectly normal in a week. But when he cut open the legs, he found the muscles had died.

In human cases, he explained, usually only fingers and toes, where there is very little muscle, are frozen. But in one human case, the woman picked up frozen in Chicago last winter, muscle damage like that in the rabbit was found in the leg that had to be amputated.

Best treatment for frostbite, Col. Lewis declared, is the rapid thawing treatment in which the frozen parts are warmed in water at 107.6 degrees Fahrenheit.

Science News Letter, June 23, 1951

INVENTION

Electricity-Conducting Glass Made with Sugar and Heat

► A METHOD of making an electrically conducting glass of low resistance brought Richard B. Ellis, Miami, Fla., patent 2,556,616. Rights are assigned to Corning Glass Works, Corning, N. Y. Ordinary glass, as it is well known, is a non-conductor.

This method includes impregnating a submicroscopically porous glass with a solvent of a saccharide, or a water solution of sugar, drying out the solvent, and then firing the glass up to at least 1,200 degrees Centigrade in a non-oxidizing atmosphere. This treatment carbonizes the saccharide or sugar within the pores. At least 4% of the finished product is carbon held within the body of the glass.

Science News Letter, June 23, 1951



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Books of the Week

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AIR POLLUTION—H. H. Schrenk—*Mellon Institute*, Reprint, 3 p., paper, free upon request to publisher, 4400 Fifth Ave., Pittsburgh 13, Pa.

BIBLIOGRAPHY IN AN AGE OF SCIENCE—Louis N. Ridlenour, Ralph R. Shaw, and Albert G. Hill—*University of Illinois Press*, 90 p., illus., \$2.50. Three lectures focused on scientific aids to learning, teaching and research. Such electronic devices as digital computers, the rapid selector, voice typewriters and coding and indexing machines are suggested to help solve the growing bibliographical problem in libraries.

CANCER OF THE GENITO-URINARY TRACT—*National Cancer Institute*, 20 p., illus., paper, single copies free upon request to publisher, Bethesda, Md. Emphasizes the urgency of early diagnosis and treatment. Gives many of the facts about this most common form of cancer in men.

CANCER OF THE SKIN—*National Cancer Institute*, 19 p., paper, single copies free upon request to publisher, Bethesda, Md. Cancer of the skin is 95% curable when it is diagnosed and treated properly. This pamphlet tells what skin conditions should be particularly watched.

CLIMBS IN THE CANADIAN ROCKIES—Frank S. Smythe—*Norton*, 260 p., illus., \$4.50. Narrative accounts of expeditions taken by the author in both the Canadian Rockies and the Lloyd George Mountains of British Columbia.

COMPARATIVE ANATOMY OF THE VERTEBRATES—Theodore H. Eaton, Jr.—*Harper*, 340 p., illus., \$4.00. A concise, fully illustrated text for one-semester courses in comparative anatomy. A substantial course in zoology is presupposed.

ELEMENTS OF TELEVISION SYSTEMS—George E. Anner—*Prentice-Hall*, 804 p., illus., \$10.35. A textbook for the electrical engineer student interested in television. One section is devoted to color television.

THE FEASIBILITY OF USING MODELS FOR PREDETERMINING NATURAL LIGHTING—E. E. Vczev—*Texas Engineering Experiment Station*, 33 p., illus., paper, free upon request to publisher, College Station, Texas. Results

of experiments made with an "experimental building" and an "artificial sky," showing how natural lighting performance of proposed buildings can be determined.

FOOD VALUES IN COMMON PORTIONS—Bureau of Human Nutrition and Home Economics—*Govt. Printing Office*, 8 p., paper, 5 cents. For nurses, clinicians, students in food classes, and others wanting a compact, handy guide to composition of familiar food items in individual servings.

HYPNOIDAL PSYCHOTHERAPY—Margaret Steger—*Froben*, 150 p., \$3.50. Presents the author's method of using the half-sleeping (hypnoideal) state in the treatment of emotional disorders such as alcoholism. Designed for the layman as well as the specialist, but psychiatrists warn against use of hypnosis by laymen.

MAN AND THE ANIMAL WORLD—Bernal R. Weimer—*Wiley*, 569 p., illus., \$5.00. A college textbook on biology as a comprehensive study of animals, their relation to man, and their life processes.

MULTIPLE SCLEROSIS: Application of Rehabilitation Techniques—Edward E. Gordon—*National Multiple Sclerosis Society*, 54 p., illus., paper, free to physicians and physiotherapists upon request to publisher, 270 Park Ave., N.Y. 17, N.Y. A manual intended for the use of physicians. There are informative pictures and diagrams of exercises and of useful devices to increase the patient's efficiency.

NATURE'S WAYS, How Nature Takes Care of Its Own—Roy Chapman Andrews—*Crown*, 206 p., illus., \$3.75. Gives many interesting examples of the way various animals, fish and birds are equipped to withstand their enemies and to obtain food. Lavishly illustrated.

PAPAIN—M. L. Tainter, and others—*New York Academy of Sciences*, 153 p., illus., paper, \$3.00. An over-all survey including a description of the processing of the enzyme, dried latex (papain) of the papaya tree.

PHOTOGRAPHY FOR TEEN-AGERS—Lucile Robertson Marshall—*Prentice-Hall*, 165 p., illus., \$2.95. Non-technical guidance for the novice. Chapters include information on everything from using the box-camera to flash-bulbs, movie-making and the use of color film.

PRACTICAL HAEMATOLOGY—J. V. Dacie—*Chemical Pub.*, 172 p., illus., \$4.50. A manual on laboratory methods for the student and technician utilizing haematological techniques. By a British author.

PRACTICE OF WILDLIFE CONSERVATION—Leonard W. Wing—*Wiley*, 412 p., illus., \$5.50. A general textbook integrating the biology of wildlife with management practice.

PRINCIPLES OF MODERN BIOLOGY—Douglas Marsland—*Holt*, Revision, 757 p., illus., \$5.25. A complete reconstruction and modernization of Charles R. Plunkett's *ELEMENTS OF MODERN BIOLOGY*. Designed for college students, this textbook contains one completely new chapter, entitled "Ecology and Evolution."

SCOUR AROUND BRIDGES—Emmett M. Laursen, C. J. Posey and others—*Highway Research Board*, 22 p., illus., paper, 45 cents. Two papers, "Progress Report of Model Studies of Scour Around Bridge Piers and Abutments" and "Investigation of Flexible Mats to Reduce Scour Around Bridge Piers," presented by the Committee on Surface Drainage of Highways under the sponsorship of the National Research Council. Research Report No. 13-B.

A SELECTED BIBLIOGRAPHY OF THE INSECTS OF THE WORLD ASSOCIATED WITH SUGAR CANE, THEIR PREDATORS AND PARASITES—J. S. Wade—*Int'l. Society of Sugar Cane Technologists*, 113 p., paper, limited free distribution upon request to publisher, Honolulu, T. H. Listing 1,277 species, of which 315 are predators or parasites.

Sexual BEHAVIOR IN PENGUINS—L. E. Richardson—*University of Kansas*, 316 p., illus., 500. A study of the mating habits and social behavior of the Yellow-eyed penguin based on ten years of close observation. The divorce rate is 18%.

TOMATOES: Facts for Consumer Education—Irene Wolgamot—*Govt. Printing Office*, 21 p., illus., paper, 10 cents. Put out by the Agriculture Department's Bureau of Human Nutrition and Home Economics, this bulletin brings together source material on nutritive value, home canning, use in family meals, etc.

Science News Letter, June 23, 1951

MEDICINE

Ear Trouble from Allergy May Lead to Deafness

► LATEST SERIOUS condition blamed on allergy is a kind of ear trouble that may, if untreated, lead to deafness.

About one out of four patients seen during the past year had ear troubles caused or complicated by allergy, Dr. Raymond E. Jordan, Pittsburgh ear, nose and throat specialist reported at the meeting of the American Medical Association in Atlantic City, N. J.

One of the most common middle ear conditions seen in his practice, he said, is the kind known medically as chronic secretory otitis media. The layman would complain of earache and perhaps of "running" ears.

More than three-fourths, 87% of 111 cases of this condition Dr. Jordan saw last year were due to allergy.

"Complications occurring in untreated cases make early diagnosis imperative," he said. "Irreversible hearing loss has resulted from middle ear adhesions involving the drum and ossicles (small bones)."

Antihistamine drugs, used in other allergy conditions, are useful in diagnosis and early control of this allergic ear trouble. But, Dr. Jordan said, after continued use these drugs lose their effectiveness. Usually the doctor must search for the substance causing the allergy and treat the patient's sensitivity to it.

Science News Letter, June 23, 1951



MEDICINE

Clearer Thermometer

► NURSES IN hospitals may have one of their regular chores greatly lightened, thanks to four years of research by the National Bureau of Standards. No longer will the nurse have to squint and puzzle when she takes a patient's temperature because the color has worn off the marks of her thermometer.

A formula for a coloring that is much more durable than any marking compound now being used has been developed by the Bureau of Standards researchers. Chief ingredient of the new marking compound is a silicone resin. Bone black, normal butyl alcohol and toluene are the other ingredients.

Color markings on hospital thermometers have to withstand constant cleaning with tincture of green soap or some other soap or detergent and germicides such as carbolic acid. All the commercial marking compounds and many experimental ones failed in less than five months when tested

in one or more of 17 soap, detergent and germicide solutions. Only the silicone compound developed by the Bureau of Standards or a modification of it withstood all the solutions for the five-months period.

The Bureau has also developed two speeded-up service tests hospitals can use on thermometers they purchase. One is a 14-day exposure to a 5% carbolic acid solution with 24 removal periods. The other consists in soaking the thermometer for 14 days in a solution of tincture of green soap of a specified concentration. The thermometer is removed eight times during the 14 days for a washing routine.

Most thermometer colorings now in use will probably be eliminated by these tests, states the Hospital Bureau of Standards and Supplies. This non-profit purchasing organization in New York suggested the thermometer study to the National Bureau of Standards in 1947.

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owner can and should build out and starve out rats.

Start with the household garbage. In areas where garbage containers are allowed to stand uncovered for hours and even days, there is usually a preponderance of rats. All cans should be tightly covered and, if possible, kept on a platform 18 inches off the ground. If garbage is kept in a sunken container, care should be taken that the rats cannot burrow underneath and that the container is not cracked. If garbage is burned, be sure that nothing remains except the ash. Paper, rags, packing material should not be allowed to accumulate because they provide nesting places for rats.

Every effort should be made to have cellars ratproof. There should be a concrete floor, masonry walls and well fitting windows and doors. There should be no openings around pipes or wires and all drains should have narrow-slotted protective covers.

Food, such as vegetables or other garden produce, and firewood must be stored on platforms elevated 18 inches above the floor and 18 inches away from all walls.

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INVENTION

Sound-Absorbing Plywood Has Textile-Backed Surface

► WOOD CAN be used as a sound-absorbing surface covering in the interior of rooms if used in a type of plywood which has a special surface to diffuse sound waves or noise. Patent 2,556,884 was awarded to Theodor Muller, New York City, for this invention. The patent has been assigned to Muller-Barringer, also of New York.

This interior finish is a multi-ply wood board having a thin flexible wood ply at its base which is reinforced by a textile backing bonded to it. The top and intermediate layers, substantially thicker than the lower layer, are cut through with parallel V-shaped grooves, both lengthwise and crosswise.

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MEDICINE

Goal: 13,000 Doctors

► SOME NEW means must be found to meet the military requirement of 13,000 physicians continually on active duty over a period of 10 or more years, Dr. Richard L. Meiling, chairman, Armed Forces Medical Policy Council, Office of the Secretary of Defense, told members of the American Medical Association meeting in Atlantic City, N. J.

The 10 years is the period of "tension" which the Secretary of Defense, Gen. Marshall, has stated we must plan for.

Dr. Meiling favors a plan, such as currently operates in other democratic countries, whereby each medical graduate serves his country the same as each 18- or 19-year-old under the universal military service for a prescribed period of time. This service could be in several small periods or one single period depending on the individual and the military needs.

The large general hospitals and specialized hospitals overseas that we had in World War II are out of the picture now. We cannot build, staff, or operate them, Dr. Meiling said. Furthermore we do not need them, because "today no U. S. military patient is more than 30 to 36 flying hours from the specialized and definitive care of hospitals of continental United States."

Unification of our forces whereby a Navy doctor may find himself working in an Army hospital commanded by an Army officer, or the reverse, is only the beginning of the kind of medical and hospital coordination needed now. With 16 nations fighting with us in Korea and the develop-

ment of the North Atlantic pact nations forces in Europe, our doctors may find themselves serving under foreign commanders and our commanding officers may find their medical and hospital services manned by foreign personnel, Dr. Meiling suggested.

"We must recognize these problems," he declared, "and dare not attempt their solution on the basis of nationalist ideas, provincialism or selfish pride in our own medical standards or advancement."

We must, he stressed, recognize the medical programs, customs and procedures of our allies as fully as their proficiency of arms if we are to have successful military operation under coordinated command.

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PUBLIC HEALTH

Build Out and Starve Out Rats

► RATS ARE dangerous, useless and destructive, warns the Illinois State Medical Society. They harbor and carry the germs of more than six serious diseases, including bubonic plague, typhus fever, infectious jaundice, rat-bite fever and food poisonings.

The damage they cause in the United States each year is estimated at \$250,000,000. Getting rid of rats by trapping and poisoning is a job for experts, particularly because rat poisons may also be dangerous to children and pet dogs and cats. But every home

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• **LATHERCAP**, to screw on the shaving-cream tube in place of the screw cap, makes and delivers the lather to the face without the use of a shaving brush. Its round base encloses a sponge into which the cream is forced by a light squeeze. Then the sponge is moistened and lather results.

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• **SPECTACLE DEFROSTER**, a recently patented device for use in buildings to remove mist from the eyeglasses of persons who have entered from the cold outside, is a portable blower, electrically heated, which delivers warm air to the lenses.

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• **WINDOW SCREENS**, for rooms with mental patients, resemble ordinary screens in appearance, but will keep patients in and insects and human intruders out. They are key-locked but, if desired, have an outside release for use in case of a fire.

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• **PERMANENT HINGE**, for the ash, trash or garbage can, is shaped to fasten by bolts near the top of the can itself and to the rim of the cover. When the cover is turned up, the hinge will hold it erect. When the cover is turned back, it is held rigid against the side of the can.

Science News Letter, June 23, 1951

• **CREASE-HOLDING SUITS** for men will be made of a new polyester fiber and wearers need never worry about wrinkles in damp or rainy weather. Dacron is the coined name for the material. Already tested in suiting, it will be ready for quantity production in the near future.

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Do You Know?

Ordinary *talc* or soapstone, is largely magnesium silicate.

In colonial days in Virginia, tobacco served as the medium of exchange.

Tubercle bacillus, the causative agent of *tuberculosis*, was identified by a German bacteriologist in 1882.

Scientists say that the *turtle* has roamed the earth's land and sea in virtually unchanged form for 200,000,000 years.

The *bull frog* is the farmer's friend because it eats flies, and mosquitoes in the larvae stage, thus destroying them before they get troublesome.



• **DICTION MACHINE**, shown in the photograph, is a portable wire-recording type which can be used also for transcriptions. It is a light compact unit that provides a clarity of voice reproduction. No erasing is necessary and the wire is used thousands of times without loss of fidelity.

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• **COOLER-HEATER UNIT**, for use in trucks carrying cargoes that need protection from heat or cold, uses dry ice for cooling and gasoline burners for heating, both inside the same housing. Electric blowers, driven by the truck's electric system, circulate the cooled or heated air.

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• **TOBACCO POUCH**, made of flexible vinylite plastic, has several long pockets on its flap each of which will hold a normal-size pipe cleaner instantly ready for use. Electrically-sealed seams give the pouch long life, and gussets on the ends permit wide opening.

Science News Letter, June 23, 1951

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